

# OPERATING INSTRUCTIONS

AV-32WZ2EN  
AV-32WZ2EP  
AV-28WZ2EN  
AV-28WZ2EP

# JVC

## SPECIFICATIONS

| Model                    | AV-32WP2EP  | AV-32WZ2EP   | AV-28WZ2EP                                     |
|--------------------------|---|--|--|
| Item                     |   |  |  |
| TV RF systems            | CCIR L, B/G, I  |  |  |
| Colour systems           | PAL, SECAM (NTSC 3.58 / 4.43 MHz only in EXT modes)   |  |  |
| Channels and frequencies | F2-F10, F21-F69, E2-E12, E21-E69, S1-S41, X, Y, Z, Z+1, Z+2, A-H, H+1, H+2<br>* Receives French cable TV channel frequencies 116-172 MHz and 220-469MHz |  |  |
| Sound-multiplex systems  | A2/NICAM (B/G, L) system  |  |  |
| Teletext systems         | Fastext (United Kingdom system) / TOP (German system) / WST (standard system)   |  |  |
| Power requirements       | AC 220 – 240 V, 50 Hz   |  |  |
| Power consumption        | Maximum 266 W,<br>Average 161 W, Standby 0.8 W  | Maximum 248 W,<br>Average 151 W, Standby 0.8 W   | Maximum 242 W,<br>Average 147 W, Standby 0.8 W |
| Picture tube size        | Visible area 76 cm<br>(measured diagonally)   |  | Visible area 66 cm<br>(measured diagonally)    |
| Audio output             | Rated Power output<br>20 W + 20 W + 5 W   | Rated Power output<br>20 W + 20 W  |  |
| Speakers                 | 10 cm round × 2,<br>3.5 cm round × 2,<br>(10 cm × 3 cm oval) × 1  | 10 cm round × 2,<br>3.5 cm round × 2   |  |
| External input / output  | EXT-1, EXT-2, EXT-3<br><br>EXT-4<br><br>AUDIO OUT   | 21-pin Euroconnector (SCART)<br><br>VIDEO IN (RCA)<br>AUDIO L / R IN (RCA)<br>S-VIDEO IN (Mini Din 4-pin)<br><br>(Variable out (0-1 Vrms), low impedance)<br>CENTRE output (RCA)<br>FRONT L/R output (RCA)<br>SURROUND REAR L/R output (RCA) | Headphone jack (stereo mini jack, dia. 3.5 mm) |
| Dimensions (W × H × D)   | 805 mm × 550 mm × 550 mm  |  | 716 mm × 489 mm × 496 mm                       |
| Weight                   | 50.3 kg   | 50.2 kg  | 36.3 kg  |
| Accessories              | Remote control unit RM-C791 × 1<br>AAA (R03) dry cell battery × 2   | Remote control unit RM-C793 × 1<br>AAA (R03) dry cell battery × 2  |  |

*Design and specifications subject to change without notice.*

Pictures displayed on the screen using this TV's image-processing functions should not be shown for any commercial or demonstration purpose in public places (tearooms and halls in hotels, etc.) without the consent of the owners of copyright of the original picture sources, as this constitutes an infringement of copyright.

**JVC**  
VICTOR COMPANY OF JAPAN, LIMITED

## COLOUR TELEVISION

### AV-32WP2EN / EP AV-32WZ2EN / EP AV-28WZ2EN / EP

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## INSTRUCTIONS

Thank you for purchasing this JVC colour television.  
To ensure your complete understanding, please read this manual thoroughly before operation.

### WARNING:

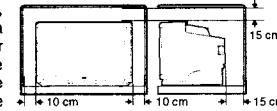
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

### CAUTION:

TO ENSURE PERSONAL SAFETY, OBSERVE THE FOLLOWING RULES REGARDING THE USE OF THIS UNIT.

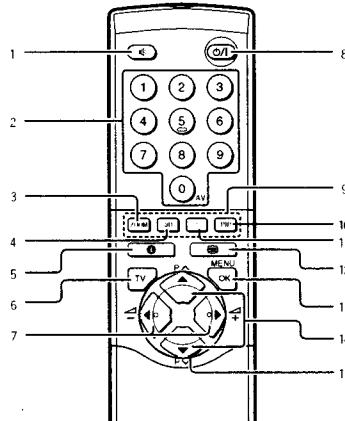
- Operate only from the power source specified (AC 220 – 240 V, 50 Hz) on the unit.
- Avoid damaging the AC plug and power cord.
- Avoid improper installation and never position the unit where good ventilation is unattainable.  
When installing this television, distance recommendations must be maintained between the floor and wall, as well as instalment in a tightly enclosed area or piece of furniture. Adhere to the minimum distance guidelines shown for safe operation.
- Do not allow objects or liquid into the cabinet openings.
- In the event of a fault, unplug the unit and call a service technician. Do not attempt to repair it yourself or remove the rear cover.

When you don't use this TV set for a long period of time, be sure to disconnect the power plug from the AC outlet.



## Locations of remote control buttons

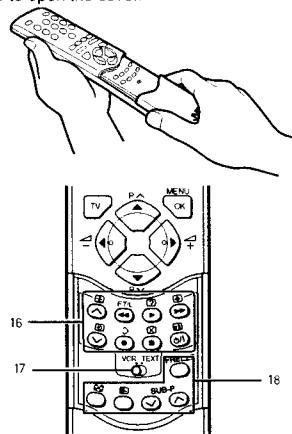
### OUTSIDE BUTTONS



|   |        |
|---|--------|
| ① Mute button   | p.11   |
| ② Number buttons  | p.7    |
| ③ ZOOM button   | p.13   |
| ④ 3D button   | p.20   |
| ⑤ Information button  | p.16   |
| ⑥ TV button   |        |
| ⑦ Volume -/+ buttons  | p.8    |
| ⑧ Standby button  | p.6, 8 |
| ⑨ Colour buttons  |        |
| ⑩ PIP button (AV-32WP2EN and AV-32WP2EP only)   | p.14   |
| ⑪ P. BASS button  | p.11   |
| ⑫ TV/text button  | p.18   |
| ⑬ OK button   |        |
| ⑭ PR channel V/I/A buttons  | p.7    |
| ⑮ </> / ▲/▼ buttons   |        |
| ⑯ Teletext/VCR control buttons  | p.18   |
| ⑰ VCR/TEXT selector switch  |        |
| • When switched to the VCR side, the 16 buttons function as the JVC VCR control buttons.                        |        |
| <b>Notes:</b>   |        |
| • For details on button functions, see the JVC VCR manual.  |        |
| • Depending on your VCR, the remote control may not operate perfectly, and may not even control the VCR at all. |        |
| • When switched to the TEXT side, the 16 buttons function as teletext control buttons.                          |        |
| ⑱ PIP control buttons   | p.14   |
| (AV-32WP2EN and AV-32WP2EP only.)   |        |

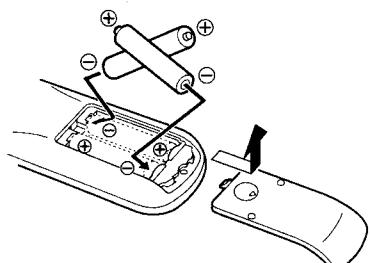
### INSIDE BUTTONS

How to open the cover.



### Inserting batteries into your remote control

Use two AAA/R03 dry cell batteries. Insert two batteries, observing the + and - polarities, inserting the - end first.



### CAUTION:

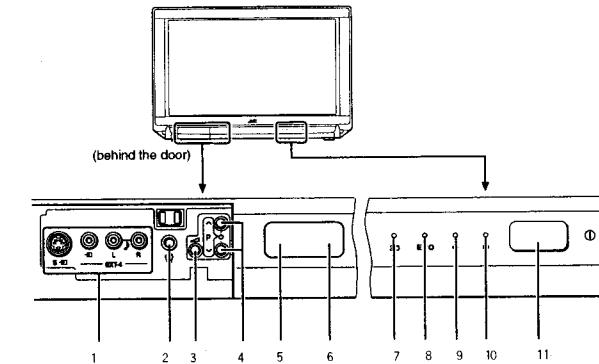
- Follow the cautions printed on the batteries.

### Notes:

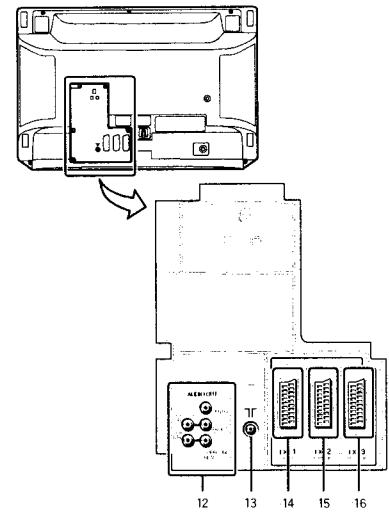
- Battery life is approx. six months to one year, depending on frequency of use.
- If the remote control operates erratically, replace the batteries.
- We recommend that you use the supplied batteries temporarily and replace them as soon as operation becomes erratic. The supplied batteries are for operational testing of the remote control, not for regular use.

## Locations of TV buttons and parts

### FRONT PANEL



### REAR PANEL



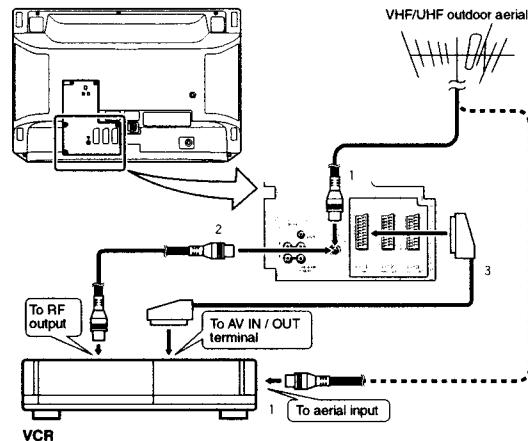
|  |         |
|--|---------|
| ① EXT-4 terminals  | p.4, 22 |
| ② Headphone jack (mini jack)   | p.5     |
| ③ Volume button  | p.9     |
| (Press this button to display the volume level indicator. Press the 4 Up/down buttons to change volume while the volume level indicator is displayed.) |         |
| ④ Up/down buttons  | p.9     |
| (You can use this button as the V/I/A buttons of the PR channel. Pressing the 3 Volume button makes this button function as the Volume -/+ buttons.)   |         |
| ⑤ Remote control sensor  |         |
| ⑥ ECO sensor   |         |
| ⑦ 3D lamp  | p.20    |
| ⑧ ECO lamp   | p.12    |
| ⑨ Sleep timer lamp   | p.16    |
| ⑩ Power lamp   | p.6, 8  |
| ⑪ Main power button  | p.6, 8  |
| ⑫ AUDIO OUT terminals  | p.27    |
| ⑬ Aerial socket  | p.4     |
| ⑭ EXT-1 terminal   | p.4, 22 |
| ⑮ EXT-2 terminal   | p.4, 22 |
| ⑯ EXT-3 terminal   | p.4, 22 |

# **PREPARATION AND BASIC OPERATION**

## ***1. Connecting the aerial and VCR***

If not connecting a VCR, do 1 only.

If connecting a VCR, proceed 1 → 2 → 3.



### **Notes:**

- For further details, refer to manuals provided with the devices you are connecting.
- Connecting cables are not supplied.
- You can view video from a VCR without doing 3. For details, refer to the manual provided with your VCR.
- Connect the S-VHS VCR to either the EXT-2 or EXT-3 connector. When the S-VHS VCR is connected to the EXT-1 connector, S-VIDEO input can not be selected.

## ***2. Connecting other external devices***

### **Conditions:**

- This TV set has external device connectors, EXT-1 to EXT-4 to which you can connect a VCR. However, there are some differences in functions among them. Consult the following table before making connections.

|             | EXT-1  | EXT-2 | EXT-3 | EXT-4 (front) |
|-------------|--|-------|-------|---------------|
| VIDEO IN    | ✓  | ✓ *1  | ✓ *1  | ✓ *1          |
| VIDEO OUT   | ✓ *2   | ✓ *3  | —     | —             |
| S-VIDEO IN  | —  | ✓ *1  | ✓ *1  | ✓ *1          |
| S-VIDEO OUT | —  | —     | —     | —             |
| RGB IN      | ✓  | —     | —     | —             |
| AUDIO-L IN  | ✓  | ✓     | ✓     | ✓             |
| AUDIO-R IN  | ✓  | ✓     | ✓     | ✓             |
| AUDIO-L OUT | ✓ *2   | ✓ *3  | —     | —             |
| AUDIO-R OUT | ✓ *2   | ✓ *3  | —     | —             |
| Others      | *1 Select VIDEO or S-VIDEO mode from the EXT SETTING menu. For details, see page 22 "EXT SETTING".<br>*2 Only the TV broadcast is output. Even when a SUB picture is displayed, the output TV broadcast PR channel does not change. However, when another PR channel is being watched in the SUB picture, if the SWAP function is used the output TV broadcast PR channel is switched.<br>*3 TV broadcasts or inputs from EXT-1, 3 or 4 can be output. For details, see page 22 "DUBBING". |       |       |               |

\*1 Select VIDEO or S-VIDEO mode from the EXT SETTING menu. For details, see page 22 "EXT SETTING".

\*2 Only the TV broadcast is output. Even when a SUB picture is displayed, the output TV broadcast PR channel does not change. However, when another PR channel is being watched in the SUB picture, if the SWAP function is used the output TV broadcast PR channel is switched.

\*3 TV broadcasts or inputs from EXT-1, 3 or 4 can be output. For details, see page 22 "DUBBING".

- Use headphones with a stereo mini jack (dia. 3.5 mm).

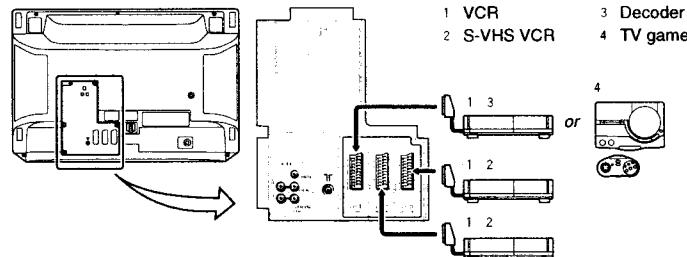
When using headphones, refer to "To listen to the sound using headphones" on page 8.

- For further details, refer to manuals provided with the devices you are connecting.

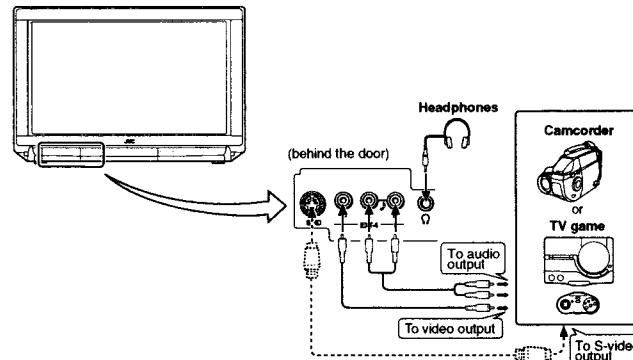
• Connecting cables are not supplied.

• For details on how to connect the AUDIO OUT terminals on your TV and external devices such as the audio amplifiers or speakers, see page 27.

## **Devices which can be connected to the terminals on the rear panel**

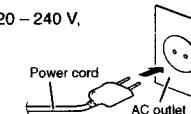


## **Devices which can be connected to the terminals on the front panel**



## ***3. Connecting the power cord***

Insert the power plug into an AC outlet (AC 220 – 240 V, 50 Hz).



## PREPARATION AND BASIC OPERATION

### 4. Turning the power and TV on

#### 1. Press the Main power button on the TV to turn the power on.

-  The Power lamp lights red (power on), then green (TV on).

If the power lamp stays red and does not change to green:  
Your TV is in the standby mode. Press the Standby button on the remote control to turn your TV on.

Note:

- You can also press the PR channel V/A button, a number button or the up/down button on the front panel to turn the TV on.

### 5. Initial Settings

- When the TV is first turned ON, it enters into the initial setting mode, and the JVC logo is displayed.

#### 1. Press any button on the remote control.

Language menu appears.

#### Selecting the on-screen language

You can select your language from ten languages listed on the LANGUAGE menu. The displayed menus on the screen are described in the selected language.

#### 2. Press V/A button to select ENGLISH.



#### 3. Press OK button.

English is set for the on-screen display description, and the COUNTRY menu appears.



#### Automatically allocating stations to PR channels

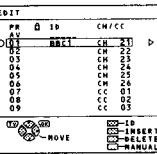
To view a TV programme, you must first allocate broadcast stations to PR channels. You can automatically allocate up to 99 stations to PR channels PR1 to PR 99 on this TV. Broadcast stations that can be received are automatically determined and set to PR channels.

#### 4. Press V/A and </> button to select your country, then press blue button.

Broadcast stations are automatically allocated to the PR channels.

The EDIT menu is displayed after completed the allocation.

- If you want to edit PR channels or allocate a station to PRO (AV) channel, see page 24 "EDIT/MANUAL" for procedural description.



Note:

- If you want to quit automatic allocation in the middle, press the TV button.

- The procedure is complete.  
Press the TV button to exit the menu.

### 6. Viewing a television programme

#### 1. Select a PR channel.

Selection



- Press the PR channel V/A button.



Direct channel selection

- Press the corresponding number buttons.  
Example: To select channel 6, press "6".  
To select channel 12, press "1" and "2".

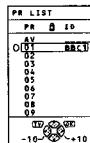


Notes:

- If the picture is not clear or no colour appears, change the colour system manually (see page 11 for details).
- Enter "0" when selecting an AV channel (PR 0 channel).
- If your TV is AV-32WP2EP or AV-32WZ2EP, the MULTI-PICTURE function can be used to select a PR channel. For details, refer to "MULTI-PICTURE" on page 15.

To use the PR LIST to select a PR channel

- Press Information button repeatedly to select PR LIST.  
The PR LIST appears.
- To exit the PR LIST, press TV button.

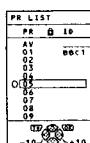


- Press V/A button to select a PR channel.

- Press ▶ button to view the next page of the PR LIST.
- Press ◀ button to view the previous page of the PR LIST.



- Press OK button.



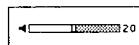
Note:

- The  mark will appear on the PR channel when the CHILD LOCK setting is on (see page 17).

## PREPARATION AND BASIC OPERATION

### 2. Press the Volume $\text{--}/\text{+}$ button.

The Volume level indicator appears and the volume changes as you press the Volume  $\text{--}/\text{+}$  buttons.



### Turning the TV and power off

#### 1. Press the Standby button to turn the TV off.

The Power lamp changes from green to red.  
The TV enters standby mode.



#### 2. Press the Main power button on the TV to turn the main power off.



The Power lamp goes off.

### To listen to the sound using headphones

#### Condition:

Connect headphones to the TV.

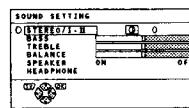
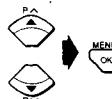
#### 1. Press OK button.

The MENU appears.



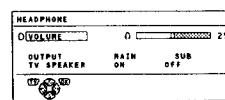
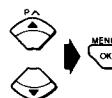
#### 2. Press $\nabla/\Delta$ button to select SOUND SETTING, then press OK button.

The SOUND SETTING menu appears.

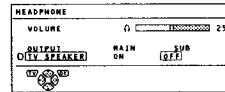
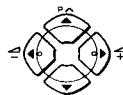


#### 3. Press $\nabla/\Delta$ button to select HEADPHONE, then press OK button.

The HEADPHONE menu appears.



### 4. Press $\nabla/\Delta$ button to select TV SPEAKER, then press $\blacktriangleleft/\blacktriangleright$ button to select ON or OFF.



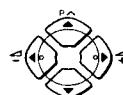
**ON:** The sound from the TV speakers is not turned off even when the headphones are connected.

**OFF:** The sound from the TV speakers is turned off when the headphones are connected.

#### Note:

- The sound output from the AUDIO OUT terminals can not be turned off.

### 5. Press $\nabla/\Delta$ button to select VOLUME, then press $\blacktriangleleft/\blacktriangleright$ button to adjust the volume of the headphones.



### 6. Press OK button.

This completes the setting.

### To select a channel without using the remote control

You can also use the buttons on the front panel of the TV.

#### 1. Press the Up/down button to turn your TV on.



The Power lamp changes from red to green.

#### 2. Press the Up/down button to select the PR channel.

#### 3. Adjust the volume.



- Press the Volume button.  
The volume level indicator appears.
- Press the Up/down button while the volume level indicator is displayed.

● To turn off your TV, press the Main power button.



The Power lamp goes off.

#### Note:

- If your TV does not turn on, press the Main power button, and then press the Up/down button again.

#### Note:

- PR channel selection is not available while the volume level indicator is displayed.

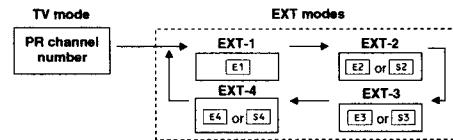
## PREPARATION AND BASIC OPERATION

### Viewing images from external devices

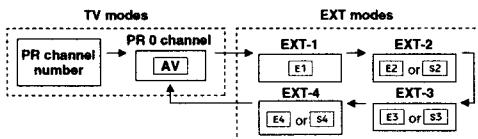
#### 1. Repeatedly press the 0 button to select the EXT terminal.

 The current selection appears, and disappears after several seconds.

When a station is not registered to the PR 0 (AV) channel, pressing the 0 button changes the selection as follows:



When a station is registered to the PR 0 (AV) channel, pressing the 0 button changes the selection as follows:



#### TV mode:

Shows images input from an external device (such as a VCR) or TV aerial connected to the aerial socket of your TV.

#### EXT modes:

Shows images input from an external device (such as a VCR) connected to the selected EXT terminal.

- To use S-Video mode to view input from an S-VHS VCR, see "To select S-VIDEO input for a terminal" on page 22. When selecting EXT-2,EXT-3 or EXT-4 input terminals as S-VIDEO input, E2,E3 or E4 changes to S2,S3 or S4in the display.

#### Notes:

- If the picture is not clear or no colour appears, change the colour system manually (see page 11).
- When selecting an EXT terminal with no input signal, the EXT number and ID become fixed on screen.

## SOUND AND PICTURE

### MUTE

You can mute the volume to 0 instantly. This is convenient when answering the phone or when receiving visitors.

#### 1. Press (Mute).

The sound is muted.



To restore the sound:  
Press the Mute button again.

### POWER BASS

You can enjoy richness and fullness of the bass sound.

#### 1. Press P. BASS.

The POWER BASS turns on.



To cancel the function:  
Press the P. BASS button again.

### MULTI SOUND

You can select the multi sound mode for stereo broadcast programmes and bilingual programmes.

#### Note:

- The MULTI SOUND function has no effect on programmes other than A2 or NICAM broadcast programmes.

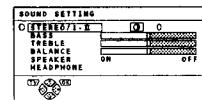
#### 1. Press OK.

The MENU appears.



#### 2. Press to select SOUND SETTING, then press OK.

The SOUND SETTING menu appears.



#### 3. Press to select TINT.

#### 3. Press to select STEREO / I + II.

- The multi sound mode display is different from the broadcast programme.
- The multi sound function does not work in EXT modes.  
The STEREO / I+II does not appear in SOUND SETTING menu.

#### 4. Press to select a multi sound mode.

-  : Stereo sound
-  : Bilingual I (Sub I)
-  : Bilingual II (Sub II)
-  : Normal sound

#### 5. Press OK.

This completes the setting.

#### Note:

- When you display the current PR channel number, the current multi sound mode appears for approximately 3 seconds.

### TINT

You can choose from among three TINT modes.

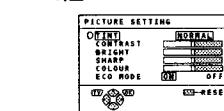
#### 1. Press OK.

The MENU appears.

#### 2. Press to select PICTURE SETTING, then press OK.

The PICTURE SETTING menu appears.

#### 3. Press to select TINT.



#### 4. Press to select a tint mode.

- COOL:** A cool white colour base with a boost in the colour and contrast levels. Creating a more vivid picture.
- WARM:** Use this mode when viewing film programmes.
- NORMAL:** A normal white colour base with no boost in the colour or contrast levels.

#### 5. Press OK.

This completes the setting.

### COLOUR SYSTEM

The colour system is automatically selected, but if the picture is not clear or no colour appears, select the colour system manually.

#### 1. Press OK.

The MENU appears.

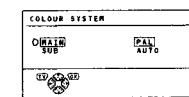
#### 2. Press to select PICTURE FEATURES, then press OK.

The PICTURE FEATURES menu appears.



#### 3. Press button to select COLOUR SYSTEM, then press OK.

The COLOUR SYSTEM menu appears.



#### 4. Press button to select MAIN or SUB.

- If your TV is not AV-32WP2EN or AV-32WP2EP, the SUB will not appear. So you can skip this operation.

#### MAIN:

You can select the colour system of MAIN picture.

#### SUB:

You can select the colour system of SUB picture.

#### 5. Press to select the appropriate colour system.

#### PAL:

PAL system.

#### SECAM:

SECAM system.

#### NTSC3.58:

NTSC 3.58 MHz system.

#### NTSC4.43:

NTSC 4.43 MHz system.

#### AUTO:

Automatic colour system selection.

## SOUND AND PICTURE

### Notes:

- Auto may not function properly depending on signal quality. If the picture is abnormal in AUTO mode, select another colour system manually.
- When in TV mode (PR 1 to PR 99), you cannot select AUTO, NTSC 3.58 or NTSC 4.43.
- When in TV mode (PR 0), you cannot select NTSC 3.58 or NTSC 4.43.

### 6. Press OK.

This completes the setting.

## PICTURE/SOUND ADJUSTMENT

You can adjust the picture and sound as you like.

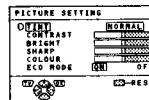
### To adjust the picture

#### 1. Press OK.

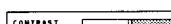
The MENU appears.

#### 2. Press ▼/▲ to select PICTURE SETTING, then press OK.

The PICTURE SETTING menu appears.



#### 3. Press ▼/▲ to select an item, and press ▲/▼ to adjust it.



To return to the default settings, press blue button.

| Item    | ▶                                |
|---------|----------------------------------|
| Lower   | CONT.                            |
| Darker  | BRIGHT                           |
| Softer  | SHARP                            |
| Lighter | COLOUR                           |
| Reddish | HUE                              |
|         | Higher<br>(picture contrast)     |
|         | Brighter<br>(picture brightness) |
|         | Sharper<br>(picture sharpness)   |
|         | Deeper<br>(picture colour)       |
|         | Greenish<br>(picture hue)        |

### Note:

- You can adjust the HUE (picture hue) only when the colour system is NTSC 3.58 or NTSC 4.43.

#### 4. Press OK.

This completes the setting.

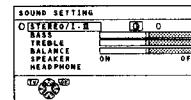
### To adjust the sound

#### 1. Press OK.

The MENU appears.

#### 2. Press ▼/▲ to select SOUND SETTING, then press OK.

The SOUND SETTING menu appears.



### Note:

- When DOLBY\* PRO LOGIC or PRO LOGIC 3D-PHONIC is selected in DIGITAL SURROUND menu, BALANCE and SPEAKER do not appear.

- Manufactured under license from Dolby laboratories Licensing Corporation.
- "Dolby", the double-D symbol and "Pro Logic" are trademarks of Dolby Laboratories Licensing Corporation.

#### 3. Press ▼/▲ to select an item, and press ▲/▼ to adjust it.

| Item   | ▶   |
|--------|---|
| Weaker | BASS Stronger<br>(low frequency sound)    |
| Weaker | TREBLE Stronger<br>(high frequency sound) |
| Left   | BALANCE Right<br>(audio balance)          |

### SPEAKER ON/OFF:

Use this function if you connect an audio amplifier and front speakers to your TV. If you set this function to OFF, sound is no longer output from the TV's speakers. For details, see "To use 2 external speakers" on page 27.

#### 4. Press OK.

This completes the setting.

## ECO MODE

When you set ECO mode to ON, the screen contrast is automatically adjusted to a setting suitable for the brightness of your room. This reduces eye strain and the power consumption of the TV.

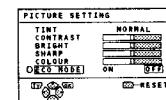
#### 1. Press OK.

The MENU appears.

#### 2. Press ▼/▲ to select PICTURE SETTING, then press OK.

The PICTURE SETTING menu appears.

#### 3. Press ▼/▲ to select ECO.



#### 4. Press ▲/▼ to select ON, OFF.

#### 5. Press OK.

- This completes the setting.
- If you turned on ECO mode, the ECO lamp lights.

## NATURAL SCAN

When you set NATURAL SCAN to ON, you can remove the horizontal line vibration on the screen so improving picture stability further.

#### 1. Press OK.

The MENU appears.

#### 2. Press ▼/▲ to select PICTURE FEATURES, then press OK.

The PICTURE FEATURES menu appears.

#### 3. Press ▼/▲ to select NATURAL SCAN.



#### 4. Press ▲/▼ to select ON, OFF.

#### 5. Press OK.

This completes the setting.

## DIGITAL VNR

When you set DIGITAL VNR to ON, you can reduce the noise on the screen so improving picture quality further.

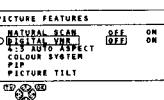
#### 1. Press OK.

The MENU appears.

#### 2. Press ▼/▲ to select PICTURE FEATURES, then press OK.

The PICTURE FEATURES menu appears.

#### 3. Press ▼/▲ to select DIGITAL VNR.



#### 4. Press ▲/▼ to select ON, OFF.

#### 5. Press OK.

This completes the setting.

## Manual ZOOM selection

you can select a desired ZOOM mode manually.

#### 1. Press ZOOM repeatedly to select a ZOOM mode.

The picture expands.

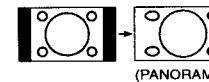
### REGULAR mode:

Use to view a normal picture (4:3 aspect ratio) unchanged.



### PANORAMIC mode:

Stretches the left and right sides of a normal picture to fill the screen, in a way that does not appear unnatural.



- In PANORAMIC mode, the top and bottom of the picture are slightly cut off.

### 16:9 ZOOM mode:

Use to expand a wide picture (16:9 aspect ratio).



### 14:9 ZOOM mode:

Use to expand a picture with a 14:9 aspect ratio.



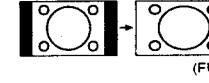
### 16:9 ZOOM SUBTITLE mode:

Use to expand a picture with a 16:9 aspect ratio having subtitles at the bottom of the screen.



### FULL mode:

Uniformly stretches the left and right sides of a normal picture (4:3 aspect ratio) to fill the wide TV screen.



### Note:

- For pictures with a 16:9 aspect ratio that have been squeezed into a normal picture (4:3 aspect ratio), select FULL mode to restore their original dimensions.

### To move the picture vertically:

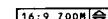
If you cannot see subtitles at the bottom of the screen, or if the top or bottom is cut off, move the picture vertically.

### Note:

- You cannot move the picture vertically in AUTO, REGULAR and FULL mode.

#### 1. Press ZOOM.

The current ZOOM mode is displayed.



#### 2. Before the display disappears, press ▼/▲ to move the picture up or down.

### Note:

- If you change the ZOOM mode, the picture returns to its default position.

## Automatic ZOOM selection (AUTO mode)

You can set your TV to automatically select the optimum ZOOM mode to suit the picture format.

#### 1. Press ZOOM repeatedly to select AUTO.

Your TV automatically selects the optimum ZOOM mode to suit the current programme's picture format.

### Note:

- This function may not work correctly depending on the programme. In this case, select the optimum ZOOM mode manually.

(Continued to the next page)

## SOUND AND PICTURE

To preset a ZOOM mode for the normal picture:

You can preset one of three ZOOM modes, REGULAR, PANORAMIC or 14:9 ZOOM, as the ZOOM mode for the normal picture (4:3 aspect ratio).

### 1. Press OK.

The MENU appears.

- Press **V/A** to select PICTURE FEATURES, then press OK.

The PICTURE FEATURES menu appears.

- Press **V/A** to select 4:3 AUTO ASPECT, then press OK.

The 4:3 AUTO ASPECT menu appears.

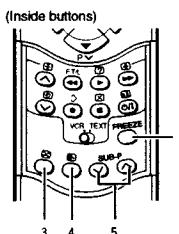
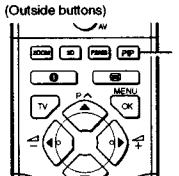


- Press **V/A** to select a ZOOM mode.

- Press OK.

This completes the setting.

## PIP (AV-32WP2EN, AV-32WP2EP only)



- PIP button
- FREEZE button
- Multi button
- Swap button
- SUB-P V/A button

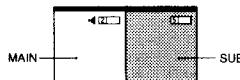
## BASIC OPERATION

You can select two types of PIP picture mode.

- Press PIP repeatedly to select a PIP mode.

Two pictures are displayed in the same time.

**Twin pictures mode:**  
MAIN-picture is displayed on the left hand and SUB-picture is displayed on the right hand.



**Picture in picture mode:**  
SUB-picture is displayed in Main picture.



- Press SUB-P V/A to select the SUB-picture's PR channel or EXT mode.

**To clear the SUB-picture:**  
Press the PIP button again.

**Notes:**

- The PR channel or EXT mode image which is the same as the MAIN-picture can not be selected.
- The movement of the Sub-picture image is not as smooth as that of the MAIN-picture image.
- If the MAIN-picture image signal condition is bad, the SUB-picture image may be disordered. If the MAIN-picture image signal condition is improved, the SUB-picture image also improves.
- If the picture standard of the MAIN-picture and SUB-picture are different, the top and bottom of one of them may be missing.
- If an external device is operated, the SUB-picture may disappear. If this happens, press the PIP button once more and redisplay the SUB-picture.
- If the SWAP button is pressed when the image from the external decoder is displayed in the MAIN picture, the same image is displayed in both the MAIN picture and SUB picture. If the SWAP button is pressed once more, the previous state is returned to.

picture. the same image is displayed in both the MAIN picture and SUB-picture. If the SWAP button is pressed once more, the previous state is returned to.

- In the Twin pictures mode, a horizontal line is displayed at the top of the screen. This is normal and is not a malfunction.

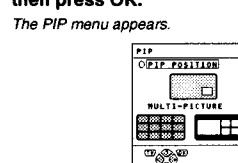
### To change the position of SUB-picture in Picture in picture mode:

You can select the one of four positions of the SUB-picture in Picture in picture mode.

- Press OK.

The MENU appears.

- Press **V/A** to select PICTURE FEATURES, then press OK.



- Press **V/A** to select PIP POSITION, then press **</>** to select the position.

- Press OK.

The menu disappears.

## To listen to the sound of the SUB-picture

While listening to the sound of the main picture on the speakers, you can listen to the sound of SUB-picture on your headphones.

- Press OK.

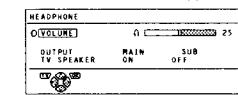
The MENU appears.

- Press **V/A** to select SOUND SETTING, then press OK.

The SOUND SETTING menu appears.

- Press **V/A** to select HEADPHONE, then press OK.

The HEADPHONE menu appears.



- Press **V/A** to select TV SPEAKER, then press **</>** to select ON or OFF.

**ON:**

Main picture sound from speakers while listening to the sound on your headphones.

**OFF:**

No sound from speakers

- Press **V/A** to select OUTPUT, then press **</>** to select SUB.

**MAIN:**

You can listen to the sound of MAIN picture on your headphones.

- Press **V/A** to select VOLUME, then press **</>** to adjust the volume of the headphones.

- Press OK.

The menu disappears.

**Notes:**

- When the SUB-picture is in TV mode, the SUB-picture sound is monaural only.
- The Multi sound function does not work for the SUB-picture sound.
- Neither any of the surround sound functions or the POWER BASS function work for the SUB picture sound.

## MULTI-PICTURE

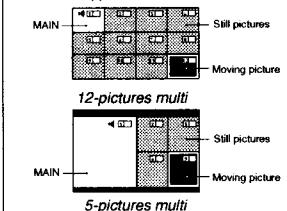
The PR channel and EXT mode images can be displayed as still pictures on the outside of the MAIN-picture, and the image which you want to see can be selected from these still pictures and seen as the MAIN-picture.

- Press the Multi button.

The PR channel and EXT mode images are displayed in the channel number order. Only the image which is displayed last is left as a moving picture. The other images change to still pictures.

**Note:**

- The MAIN-picture PR channel number or EXT mode number is skipped.



- Press **V/A** to select TV SPEAKER, then press **</>** to select ON or OFF.

**ON:**

Main picture sound from speakers while listening to the sound on your headphones.

**OFF:**

No sound from speakers

- Press **V/A** to select OUTPUT, then press **</>** to select SUB.

**MAIN:**

You can listen to the sound of MAIN picture on your headphones.

- Press **V/A** to select VOLUME, then press **</>** to adjust the volume of the headphones.

- Press OK.

The menu disappears.

**In order to display the next PR channel or EXT mode image:**  
Press the Multi button again.

**To clear the Multi-pictures:**  
Press the TV button.

- Press the **V/A** button or SUB P **V/A** button and select the PR channel or EXT terminal image that you want to see.

The selected image changes from a still picture to a moving picture.

- Press OK.

The Multi-pictures disappear and the MAIN-picture image changes to the selected PR channel or EXT terminal image.

## To select the multi-picture style

You can select one of two multi-picture's styles.

- Press OK.

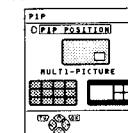
The MENU appears.

- Press **V/A** to select PICTURE FEATURES, then press OK.

The PICTURE FEATURES menu appears.

- Press **V/A** to select PIP, then press OK.

The PIP menu appears.



- Press **V/A** to select MULTI-PICTURE, then press **</>** to select a multi-picture's style.

- Press OK.

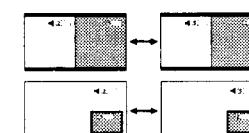
The menu disappears.

## SWAP

You can swap MAIN and SUB-pictures

- Press the Swap button.

Each time you press the Swap button, the MAIN/picture and SUB-picture swap.



**Notes:**

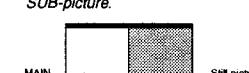
- If the SWAP button is pressed when the image from the external decoder is displayed in the MAIN picture, the same image is displayed in both the MAIN picture and SUB picture. If the SWAP button is pressed once more, the previous state is returned to.
- When another PR channel is being watched in the SUB picture, if the SWAP function is used the TV broadcast PR channel, which is output from the EXT-1, EXT-2 or EXT-3 terminal, is switched.

## FREEZE

You can view the MAIN-picture's frozen image as the SUB-picture.

- Press FREEZE.

The main picture's frozen image (still picture) is displayed as the SUB-picture.



**To cancel the FREEZE function:**  
Press the FREEZE button again.

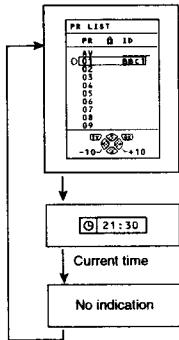
# OTHER FEATURES

## INFORMATION

You can display the PR LIST or the current time.

1. Press **□** (Information) repeatedly.

The display changes cyclically in the following order.



### About PR LIST:

- Ten positions including the currently selected PR channel will be displayed as a list.

Press **▼/▲ / ▲/▼** to select the desired PR channel. For details see page 7.

**About the current time display:**  
This TV uses teletext data to determine the current time.

- If the TV has not received a station that has teletext data since it was turned on, the time display is blank. To view the current time, select a station that is broadcasting teletext data. As long as you do not turn off the TV, then even if you select other stations, the time will still be displayed.
- When watching videos, the wrong current time is sometimes displayed.

## SLEEP TIMER

You can set the TV to automatically turn off after a specified period of time.

### Note:

- The SLEEP TIMER does not turn off the Main power.

1. Press OK.

The MENU appears.

2. Press **▼/▲** to select FEATURES, then press OK.

The FEATURES menu appears.



3. Press **▼/▲** to select SLEEP TIMER, then press OK.

The SLEEP TIMER menu appears.



4. Press **◀/▶** to select a period of time.

You can set the period of time a maximum of 120 minutes in 10 minute increments.

### OFF:

Turns off the SLEEP TIMER.

5. Press OK.

## BLUE BACK

When viewing a PR channel with no or poor reception, or if there is no input from an external device, you can mute the sound and change the picture into a blue picture.

1. Press OK.

The MENU appears.

2. Press **▼/▲** to select FEATURES, then press OK.

The FEATURES menu appears.



3. Press **▼/▲** to select BLUE BACK.



4. Press **◀/▶** to select ON or OFF.

5. Press OK.

This completes the setting.

## CHILD LOCK

You can lock some PR channels to prevent your children from watching them.

### To set the CHILD LOCK

1. Press OK.

The MENU appears.

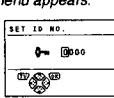
2. Press **▼/▲** to select FEATURES, then press OK.

The FEATURES menu appears.



3. Press **▼/▲** to select CHILD LOCK, then press 0 button.

The SET ID NO. menu appears.

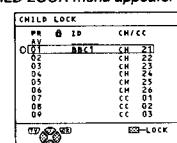


4. Enter the ID number.

1. Press **▼/▲** to select a number.
2. Press **◀/▶** to move the cursor.

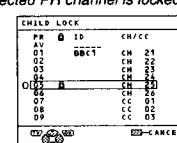
5. Press OK.

The CHILD LOCK menu appears.



6. Press **▼/▲** to select a PR channel, then press blue button.

The selected PR channel is locked.



- To cancel the CHILD LOCK: Press blue button again.
- Repeat step 6 to lock all PR channels which you want to lock.

7. Press OK.

This completes the setting.

### Notes:

- You cannot select a locked PR channel using the PR channel V/A buttons.
- Even if you can select a locked channel and display it, you can not view the programme of the locked channel.

## DEMONSTRATION

The demonstration runs automatically and introduces the menus of this TV's main features.

1. Press OK.

The MENU appears.

2. Press **▼/▲** to select DEMO, then press OK.

The demonstration begins.

- To stop the demonstration, press any button on the remote control.

## INDEX

You can go to the desired function's menu directly from this INDEX menu.

1. Press OK.

The MENU appears.

2. Press **▼/▲** to select INDEX, then press OK.

The INDEX menu appears.



3. Press **▼/▲** to select the function you want to use, then press OK.

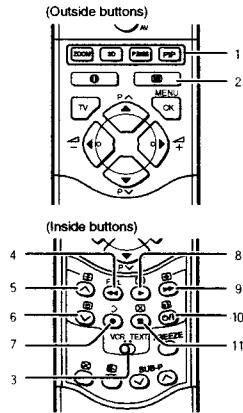
Your selected function's menu or the menu which includes your selected function appears.

- To return to the MENU, press the Information button.

# TELETEXT

**Note:**

- If you have trouble receiving teletext broadcasts, consult your local dealer or the teletext station.



- 1 Colour buttons
- 2 TV/text button
- 3 VCR/TEXT selector switch
  - When this switch is set to the TEXT side, the following buttons function as the teletext control button.
- 4 MODE button
- 5 HOLD button
- 6 SUB PAGE button
- 7 STORE button
- 8 REVEAL button
- 9 SIZE button
- 10 INDEX button
- 11 DISPLAY CANCEL button

## BASIC TELETEXT OPERATION

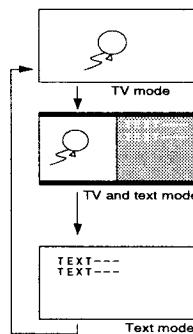
You can view three types of teletext broadcasts on the TV: Fastext, TOP and WST. The TV automatically recognizes the type of teletext broadcast.

**Condition:**

- The VCR/TEXT selector switch must already be set to the TEXT side.

1. Select a channel with a teletext broadcast.

### 2. Press (TV/text).



**Notes:**

- You can also return to TV mode by pressing the TV button.
- None of the MENU operations are possible in the Text mode. Perform the MENU operation after pressing the TV/Text button to cancel the Text mode.
- In the TV and text mode, a horizontal line is displayed at the top of the screen. This is normal and is not a malfunction.

## DISPLAY CANCEL

You can search for a teletext page while watching TV.

### 1. Select a teletext page.

*The TV searches for a teletext page.*

### 2. Press DISPLAY CANCEL.

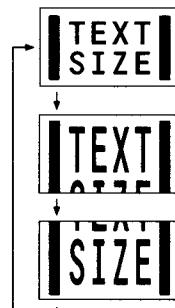
*The TV programme appears.*  
When the TV finds the teletext page, its page number appears in the upper left of the screen.

### 3. Press (TV/text) when the page number is on the screen.

## SIZE

You can double the height of the teletext display.

### 1. Press SIZE repeatedly.



**Notes:**

- Category names of teletext pages may appear instead of page numbers.
- In principle, ZOOM mode is fixed to FULL mode when you view Teletext programmes.
- Some Teletext programmes display a mixture of regular TV programmes and Teletext information. When viewing these programmes, ZOOM mode returns to the mode you selected before you started viewing Teletext programmes. With the ZOOM mode, the Teletext information may not be displayed in the correct position. If this happens, press the TV/Text button to cancel the Text mode, then press the ZOOM button to change the ZOOM mode to the PANORAMIC mode or FULL mode.

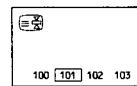
- To return to TV mode, press the TV/text button repeatedly.

## HOLD

You can hold a teletext page on the screen for a desired length of time, even while several other teletext pages are being received.

### 1. Press HOLD.

is displayed in the upper left of the screen, and the teletext page is held on the screen.



**To release hold mode:**  
Press HOLD button again.

## INDEX

Just press INDEX button to return to the index page.

### 1. Press INDEX.

**Fastext/TOP/WST:**  
Returns to page 100 or a previously specified page.

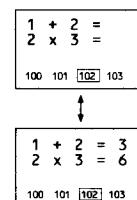
**LIST mode:**  
Returns to the page number displayed in the lower left area of the screen.

## REVEAL

Some teletext pages include hidden text (such as answers to a quiz).

### 1. Press REVEAL.

Each time you press REVEAL button, text is hidden or revealed.



**To release LIST mode:**  
Press MODE button again.

2. Press a colour button to which a page has been assigned.

## LIST MODE

If you store the numbers of teletext pages you view often, you can quickly call up a desired teletext page whenever you like.

**Note:**

- You can store up to 64 pages in memory. You can store four pages in each channel from 1 to 15 (60 pages), and four pages that are the same for all channels above channel 15 (4 pages).

## To store the page numbers

1. Press MODE to engage LIST mode.

Stored page numbers are displayed at the bottom of the screen.

2. Press a colour button, then enter the number of the teletext page.

To assign other pages to remaining colour buttons, repeat this operation.

3. Press and hold STORE.

The four page numbers blink white to indicate that they are stored in memory.

## To call up a stored page

1. Press MODE to engage LIST mode.

Stored page numbers are displayed at the bottom of the screen.

**To release LIST mode:**  
Press MODE button again.

2. Press a colour button to which a page has been assigned.

## SUB PAGE

Some teletext pages include sub-pages that are automatically displayed. You can hold any sub-page, or view it at any time.

1. Call up a teletext page with sub-pages.

### 2. Press SUB PAGE.

Sub-page numbers are displayed at the left of the screen.

### Background colour of the sub-page number is yellow:

This is the number of the sub-page which is currently being displayed.

### Background colour of the sub-page number is white:

These are the numbers of the sub-pages which can be displayed.

### Background colour of the sub-page number is blue or red:

These are the numbers of sub-pages which have not been sent and can therefore not be displayed.

3. Press button to select a sub-page number.

# SURROUND SOUND

## DOLBY PRO LOGIC 3D-PHONIC

You can enjoy the ambience of Dolby Surround encoded programmes.

**Condition:**

- Before performing the procedure, disconnect headphones from the TV.

**Note:**

- This function works only with Dolby Surround encoded programmes.
- When operating this function, the TV's 3D lamp lights up.
- This function does not work correctly when listening to the sound with headphones.

**1. Press OK.**

The MENU appears.

**2. Press ▼/▲ to select DIGITAL SURROUND, then press OK.**

The DIGITAL SURROUND menu appears, showing the currently active function.

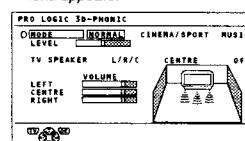


**3. Press ▼/▲ to select PRO LOGIC 3D-PHONIC.**

To cancel the function:  
Select SURROUND OFF, then press the OK button.

**4. Press ►.**

The PRO LOGIC 3D-PHONIC menu appears.



**5. Press ▼/▲ to select MODE.**

**6. Press ▲/▼ to select the desired mode.**

**NORMAL:**  
For normal programmes

**CINEMA/SPORT:**  
For cinema and sports programmes

**MUSIC:**  
For music programmes

**To adjust the effect level:**  
Press the ▼/▲ button to select LEVEL, then press the ▲/▼ button to adjust the effect level.

**To adjust the volume level of each speaker:**

Press ▼/▲ button to select LEFT, CENTRE or RIGHT, then press ▲/▼ button to adjust the volume level.

**Note:**

- Since models other than AV-32WP2EN and AV-32WP2EP do not have a centre speaker built-in to the TV, CENTRE can not be selected. However, when 2 external speakers are being used, the TV speakers can be used as the centre speaker, so CENTRE can be selected.

**TV SPEAKER:**

This setting is only changed when 2 external speakers are being used. For details, refer to "To use 2 external speakers" on page 27.

**Note:**

- When not using external speakers, leave the TV SPEAKER setting as L/R/C (L/R in the case of models other than AV-32WP2EN and AV-32WP2EP). Otherwise sound may not come out of the TV speakers or the sound may become monaural.

**7. Press OK.**

**Note:**

- If, while using this function, you connect headphones to your TV, the 3D HEADPHONE function (see next page) activates automatically. However, if SPEAKER is set to ON in the HEADPHONE menu, the 3D HEADPHONE function is not activated.

**To turn on/off DOLBY PRO LOGIC 3D-PHONIC with one touch**

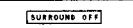
**1. Press 3D.**

DOLBY PRO LOGIC turns on.

**Note:**

- If 3D HEADPHONE appears, disconnect the headphones from the TV.

**To cancel the function:**  
Press the 3D button again.



**To return the previous surround function:**  
Press the 3D button twice.

## DIGITAL SURROUND

You can enjoy any one of the four Digital Surround function.

**Condition:**

- Before performing the procedure, disconnect headphones from the TV.

**1. Press OK.**

The MENU appears.

**2. Press ▼/▲ to select DIGITAL SURROUND, then press OK.**

The DIGITAL SURROUND menu appears, showing the currently active function.



**3. Press ▼/▲ to select the desired function.**

**DANCE CLUB:**  
For the atmosphere of a dance club

**CONCERT HALL:**  
For the atmosphere of a concert hall

**STADIUM:**  
For the atmosphere of a stadium

**HYPER SOUND:**  
To give monaural sound the spacious feeling of stereo sound

**To cancel the function:**  
Select SURROUND OFF.

**4. Press OK.**

**Notes:**

- Only HYPER SOUND works well with monaural sound programmes.
- HYPER SOUND does not work well with stereo sound programmes.
- If, while using this function, you connect headphones to your TV, Headphone Surround (see next page) activates automatically. However, if SPEAKER is set to ON in the HEADPHONE menu, the HEADPHONE SURROUND function is not activated.

## HEADPHONE SURROUND

You can enjoy surround sound on your headphones. You can enjoy any one of the four Headphone surround functions.

**Condition:**

- Before performing this procedure, connect headphones to the TV.

**1. Press OK.**

The MENU appears.

**2. Press ▼/▲ to select HEADPHONE SURROUND, then press OK.**

The HEADPHONE SURROUND menu appears, showing the currently active function.



If HEADPHONE SURROUND does not appear in the MENU, set SPEAKER in the HEADPHONE menu to OFF. For details, refer to "To listen to the sound using headphones" on page 8.

**3. Press ▼/▲ to select the desired function.**

**DANCE CLUB:**  
For a broad, atmospheric sound

**CONCERT HALL:**  
For the atmosphere of a concert hall

**STADIUM:**  
For the atmosphere of a stadium

**HYPER SOUND:**  
To give monaural sound the spacious feeling of stereo sound

**To cancel the function:**  
Select SURROUND OFF.

**4. Press OK.**

**Notes:**

- HYPER SOUND does not work well with stereo sound programmes.

## To turn the 3D HEADPHONE on/off with one touch

**1. Press 3D.**

3D HEADPHONE turns on.



**2. Press OK.**

The MENU appears.

**3. Press ▼/▲ to select HEADPHONE SURROUND, then press OK.**

The HEADPHONE SURROUND menu appears, showing the currently active function.



To return the previous surround function:  
Press the 3D button twice.

## DOLBY PRO LOGIC SURROUND

You can also use Dolby Pro Logic Surround sound with 4 or 5 speakers. If you wish to use this system, additional amplifiers and speakers are required. For details, see "To use 4 or 5 speakers" on page 28.

**Condition:**

- Before performing the procedure, disconnect headphones from the TV.

**Note:**

- This function works only with Dolby Surround encoded programmes.

**1. Press OK.**

The MENU appears.

**2. Press ▼/▲ to select DIGITAL SURROUND, then press OK.**

The DIGITAL SURROUND menu appears, showing the currently active function.



**3. Press ▼/▲ to select DOLBY PRO LOGIC.**

**To cancel the function:**  
Select SURROUND OFF.

## OTHER PREPARATION

### EXT SETTING

You can select S-VIDEO or normal input for the EXT-2, EXT-3 and EXT-4 terminals, and you can give an EXT ID to each EXT input terminal.

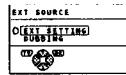
#### To select S-VIDEO input for a terminal

- Press OK.

The MENU appears.

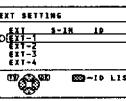
- Press **▼/▲** to select EXT SOURCE, then press OK.

The EXT SOURCE menu appears.



- Press **▼/▲** to select EXT SETTING, then press OK.

The EXT SETTING menu appears.

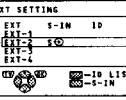


- Press **▼/▲** to select an EXT input terminal.

- Press yellow button.

The S-VIDEO input indication appears.

- To select normal input, press yellow button again.



- If you want to set an EXT ID here, perform the operation procedures from the step 4 of the section "To give an EXT ID to an EXT input terminal" in the next column.

- Press OK.

The menu disappears.

### To give an EXT ID to an EXT input terminal

- Press OK.

The MENU appears.

- Press **▼/▲** to select EXT SOURCE, then press OK.

The EXT SOURCE menu appears.

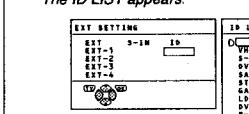
- Press **▼/▲** to select EXT SETTING, then press OK.

The EXT SETTING menu appears.

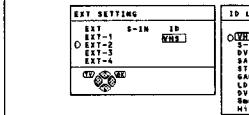
- Press **▼/▲** to select an EXT input terminal.

- Press blue button.

The ID LIST appears.



- Press **▼/▲** to select a EXT ID.



**Note:**

- To erase the EXT ID, select a blank space.

- Press OK.

- This completes the procedure. Press the TV button to exit the menu.

### DUBBING

Select output to a VCR or other device connected to the EXT-2 terminal. Note that you cannot output from the EXT-2 terminal when the TV is turned off.

**Note:**

- RGB signals from TV games and TELETEXT screens cannot be output from EXT-2 terminal.

- Press OK.

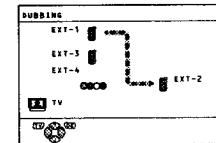
The MENU appears.

### 2. Press **▼/▲** to select EXT SOURCE, then press OK.

The EXT SOURCE menu appears.

### 3. Press **▼/▲** to select DUBBING, then press OK.

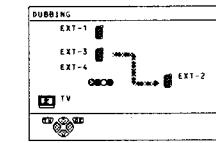
The DUBBING menu appears.



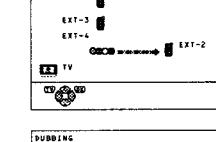
### 4. Press **▼/▲** to select the input which you want to output from EXT-2.

TV:

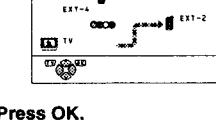
The sound and picture of the currently selected PR channel is output from EXT-2, so you can record the output on a VCR connected to the EXT-2 terminal while watching a video input from the EXT-1, EXT-2 or EXT-4 terminal. Even when a SUB picture is displayed, the output TV broadcast PR channel does not change. However, when another PR channel is being watched in the SUB picture, if the SWAP function is used, the output TV broadcast PR channel is switched.



### 5. Press **▼/▲** to select a EXT ID.



### 6. Press **▼/▲** to select an EXT input terminal.



### 7. Press OK.

The menu disappears.

### LANGUAGE

You can select one of ten languages for the on-screen display.

- Press OK.

The MENU appears.

- Press **▼/▲** to select INSTALL, then press OK.

The INSTALL menu appears.



- Press **▼/▲** to select LANGUAGE, then press OK.

The LANGUAGE menu appears.



- Press **▼/▲** to select a language.

- Press OK.

This completes the setting.

### AUTO PROGRAM

You can automatically allocate up to 99 stations to PR channels PR 1 to PR99 on this TV.

When the TV receives a signal describing the station's name, it allocates those stations, station IDs, and registers them as they were preset at the JVC factory.

- Press OK.

The MENU appears.

- Press **▼/▲** to select INSTALL, then press OK.

The INSTALL menu appears.

- Press **▼/▲** to select AUTO PROGRAM, then press OK.

The COUNTRY menu appears.



- Press **▼/▲** / **◀/▶** to select your country.

**Note:**

- If you make a mistake when selecting your country, or do not want to use the Automatic allocation function, press OK button to return to the INSTALL menu.

- Press blue button.

The PR channel is automatically set and the EDIT menu is displayed.

- If you want to edit PR channels or allocate a station to PR0 (AV) channel, see page 24 "EDIT/MANUAL" for procedural description.

**Note:**

- If a station you want to view is not allocated to a PR channel, perform Manual allocation (see page 26).

- The procedure is complete. Press the TV button to exit the menu.

## OTHER PREPARATION

### EDIT/MANUAL

You can change PR channel settings by doing any of the following:

- You can delete an unwanted station from a PR channel,
- You can change the PR channel number of a station,
- You can add station IDs to PR channels,
- You can add a new station to a PR channel, or
- You can manually allocate the desired station to a PR channel.

### To edit PR channels

#### 1. Press OK.

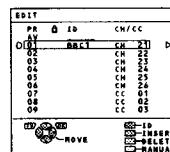
The MENU appears.

#### 2. Press ▼/▲ to select INSTALL, then press OK.

The INSTALL menu appears.

#### 3. Press ▼/▲ to select EDIT/MANUAL, then press OK.

The EDIT menu appears.

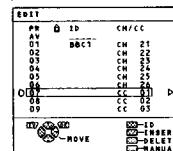


#### 4. Use any of the procedures described in the following pages to change the PR channel settings.

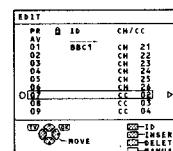
● This completes the procedure.  
Press the TV button to exit the menu.

### To delete a station from a PR channel

#### 1. Press ▼/▲ to select the station you want to delete.



#### 2. Press yellow button.

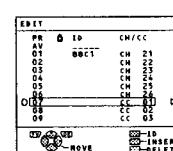


#### Note:

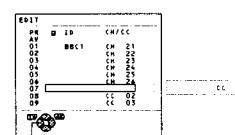
- Stations allocated to PR channels following the deleted PR channel number are shifted back by one to the preceding PR channel number.

### To change the PR channel number of a station

#### 1. Press ▼/▲ to select the station.

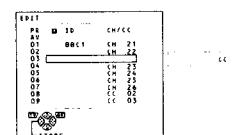


#### 2. Press ▶.

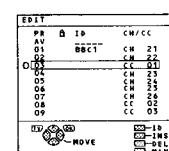


### 3. Press ▼/▲ to move the selected station to the desired PR channel number.

- To cancel the operation, press the (Information) button.

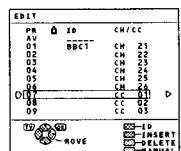


#### 4. Press ◀.

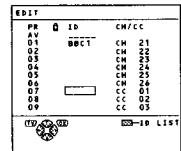


### To add a station ID to a station

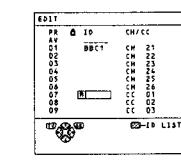
#### 1. Press ▼/▲ to select the station.



#### 2. Press red button.

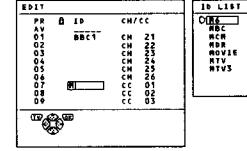


#### 3. Press ▼/▲ to select the first letter of the desired station's ID.



#### 4. Press blue button.

The ID LIST menu appears.

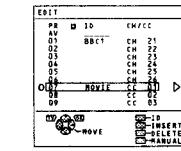


#### 5. Press ▼/▲ to select the station ID.

- To cancel the operation, press the (Information) button.

#### 6. Press OK.

Returns to the EDIT menu.



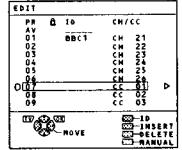
### Programming a station's ID manually:

Follow the operations below in place of steps 3 thru 5.

- (1) Press the ▼/▲ button repeatedly to select a character.
- (2) Press the ► button to move cursor to input position.
- Pressing the ◀ button moves the cursor backward.
- (3) To complete station ID, follow steps 1 and (2) repeatedly.
- A station ID can have up to 5 characters.

### To add a new station to a PR channel

#### 1. Press ▼/▲ to select the row containing the PR channel number to which you want to add a station.



#### 2. Press green button.

#### 3. Press ▼/▲ to display the enter number indicator.

CH: to add terrestrial broadcast stations

CC: to add cable TV stations

**AV-32WP2EP, AV-32WZ2EP and AV-28WZ2EP only:**

If COUNTRY is set to FRANCE, select one of the following four items:

CH1: to add a system L terrestrial broadcast channel

CH2: to add a system B/G or I terrestrial broadcast channel

CC1: to add a system L cable TV channel

CC2: to add a system B/G or I cable TV channel

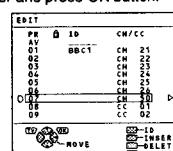
- To cancel the operation, press the (Information) button.

#### Note:

- For details on the relationship between the displayed CH/CC number and the actual channel number, see the Channel table on page 31.

#### 4. Press the number buttons to enter the channel number.

- To enter a one-digit channel number, enter the corresponding number and press OK button.



#### Note:

- When you add a station, the station preset to PR99 is deleted.

AV-32WZ2EN  
AV-32WZ2EP  
AV-28WZ2EN  
AV-28WZ2EP

## OTHER PREPARATION

### To manually allocate a station to PR channel (Manual allocation)

#### Condition:

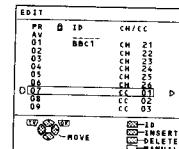
- If your TV is AV-32WP2EP, AV-32WZ2EP or AV-28WZ2EP, you can manually allocate French channels to PR channels.

To manually allocate French stations to PR channels, you must set COUNTRY to FRANCE. If COUNTRY is set to any other country than FRANCE, perform "AUTO PROGRAM" steps 1 thru 4 on page 23 to set COUNTRY to FRANCE. Then press the OK button to return to the INSTALL menu. Finally, press the EDIT button to edit PR channel step 2 thru 3 on page 24 to return to the EDIT menu.

#### 1. Press **▼/▲** to select a PR channel number.

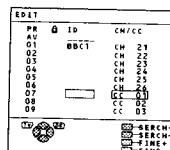
##### Note:

- PR channel number "AV" appears on the screen as PR 0 channel. We recommend that you allocate this PR channel to a VCR connected to the aerial socket.



#### 2. Press blue button.

Your TV enters the Manual allocation mode.



#### 3. Press green or red button to search for a station.

Scanning stops when the TV receives a broadcast.

Press green or red button to search for another station, and keep searching until you see the station you want.

CH: Terrestrial broadcast stations  
CC: Cable TV stations

**If reception is poor:**  
Press the blue or yellow button to fine-tune the station.

**If your TV is AV-32WP2EP, AV-32WZ2EP or AV-28WZ2EP:**  
When COUNTRY is set to FRANCE, the broadcast system is displayed as "(B/G)", "(I)" or "(L)" to the right of the PR channel number. If the signal of a station is incorrectly received, press the **►** button to change the broadcast system and then repeat step 3.

##### Note:

- For details on the relationship between the displayed CH/CC number and the actual channel number, see the Channel table on page 31.

#### 4. Press **◀▶** to select the direction to which you want to correct the tilted image on your screen.

- If it is inclined to the left, select this symbol to correct it.
- If it is inclined to the right, select this symbol to correct it.
- If it is not inclined to either the left or right, select this symbol to set it as it is.

#### 5. Press OK.

The correction is complete.

#### 6. Press OK.

The station is allocated to a PR channel.

### PICTURE TILT

(except AV-28WZ2EN and AV-28WZ2EP)

The AV-32WP2EN, AV-32WP2EP, AV-32WZ2EN or AV-32WZ2EP has a large picture tube in which a picture could be tilted to the left or right because of magnetic pull from the earth. Use the procedure described below to adjust the picture.

##### Note:

- The AV-28WZ2EN or AV-28WZ2EP does not have the tilted image correction function.

#### 1. Press OK.

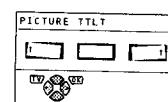
The MENU appears.

#### 2. Press **▼/▲** to select PICTURE FEATURES, then press OK.

The PICTURE FEATURES menu appears.

#### 3. Press **▼/▲** to select PICTURE TILT, then press OK.

The PICTURE TILT menu appears.



**4. Press **◀▶** to select the direction to which you want to correct the tilted image on your screen.**

- If it is inclined to the left, select this symbol to correct it.
- If it is inclined to the right, select this symbol to correct it.
- If it is not inclined to either the left or right, select this symbol to set it as it is.

#### 5. Press OK.

The correction is complete.

## CONNECTING AMPLIFIERS AND SPEAKERS

#### Condition:

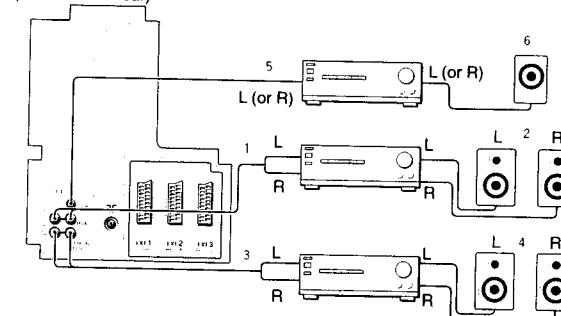
- When connecting audio amplifiers and speakers to your TV:
- Turn the TV and audio amplifiers off before connecting them.
- Set the audio amplifiers' volume to minimum.
- Refer to manuals provided with the amplifier and speakers for further details.

#### Notes:

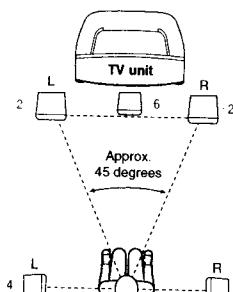
- The AUDIO OUT terminals on your TV are for connecting to an audio system. The output level is controlled by the Volume controls of your TV. The signal from the AUDIO OUT terminals will not cut off when headphones are connected.
- If you connect a Dolby Pro Logic Surround decoder to your TV, use the FRONT L and R jacks. Your TV has Dolby Pro Logic Surround functions, so if you connect an external decoder, turn off all surround function on your TV.

1, 3 : Stereo amplifier  
2 : Front speakers (magnetic-shielded type, L, R)  
4 : Surround speakers (L, R)  
5 : Stereo amplifier (or monaural amplifier)  
6 : Centre speaker (magnetic-shielded type)

(Terminals on rear)



### Positioning speakers



#### Notes:

- For a good effect, place speakers 4 1.0 m above the seated listener's head.
- For a good effect, place speaker 6 as close as possible to the TV along the same line as or behind, speakers 2.
- Use magnetic-shielded speakers for speakers 2 and 6 to avoid TV interference.

### To use 2 external speakers

You can cut off the sound output from the TV's speakers and enjoy sound from external front speakers.

#### 1. Connect stereo amplifier ① and front speakers ② to your TV.

#### 2. Turn your TV on, and press the Volume **-/+** button to set the volume to the lowest setting.

#### 3. Press OK.

The MENU appears.

#### 4. Press **▼/▲** to select SOUND SETTING, then press OK.

The SOUND SETTING menu appears.



##### Note:

- When DOLBY PRO LOGIC or PRO LOGIC 3D-PHONIC is selected in DIGITAL SURROUND menu, "SPEAKER" does not appear. In this case, press the OK button to exit the current menu. Then, press the 3D button twice to select SURROUND OFF and repeat from Step 3.

#### 5. Press **▼/▲** to select SPEAKER.

#### 6. Press **◀▶** to select OFF.

The TV's speakers become silent.

**To output sound from the TV speakers:**  
Set SPEAKER to ON.

#### 7. Press OK.

The menu disappears.

**When using the TV speakers as the centre speaker:**

When enjoying the DOLBY PRO LOGIC 3D-PHONIC surround sound, it can be set so that 2 external speakers and the TV speakers (used as the centre speaker) can be used at the same time.

(Continued to the next page)

## CONNECTING AMPLIFIERS AND SPEAKERS

In particular, since models other than AV-32WP2EN and AV-32WP2EP do not have a centre speaker built-in to the TV, if this method is used the "dialogue" becomes clearer.

### 1. Press OK.

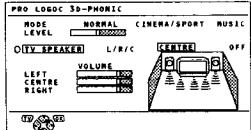
The menu appears.

### 2. Press ▼/▲ button to select DIGITAL SURROUND, then press OK.

The DIGITAL SURROUND menu appears.

### 3. Press ▼/▲ button to select PRO LOGIC 3D-PHONIC, then press ▶.

The PRO LOGIC 3D-PHONIC menu appears.



### 4. Press ▼/▲ button to select TV SPEAKER, then press ▲/▼ button to select CENTRE.

### 5. Press OK.

The menu disappears.

### 8. Turn your audio amplifier on, and return the volume of your audio amplifier to the normal setting.

**Note:**  
• Take care not to set the volume of your audio amplifier too high as this may damage your speakers.

### 9. Press the Volume -/+ button to adjust the volume.

● This completes the procedure.

## To use 4 or 5 speakers

You can enjoy Dolby Pro Logic Surround sound with 4 or 5 speakers.

### 1. Connect audio amplifiers and speakers to the TV.

Do one of the following:

A: Connect stereo amplifier 3 and surround speakers 4.  
• If your TV is AV-32WP2EN or AV-32WP2EP, it has a centre speaker built-in and you can easily enjoy Dolby Pro Logic surround sound using 5 speakers.

B: If your TV is not AV-32WP2EN or AV-32WP2EP, although it does not have a centre speaker built-in to the TV, you can easily enjoy Dolby Pro Logic surround sound by using the PHANTOM mode which omits the centre speaker.

C: Connect stereo amplifiers 1, 3, front speakers 2, and surround speakers 4. This uses the TV's speakers as the centre speakers.

D: Connect stereo amplifiers 1, 3, stereo amplifier (or monaural amplifier) 5, front speakers 2, surround speakers 4, and centre speaker 6. If you use this method, do not output sound from the TV's speakers.

### 2. Turn your TV on, and press the Volume -/+ button to set the volume to the normal setting.

### 3. Press OK.

The MENU appears.

### 4. Press ▼/▲ to select DIGITAL SURROUND, then press OK.

The DIGITAL SURROUND menu appears, showing the currently selected setting.



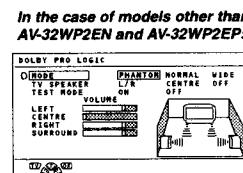
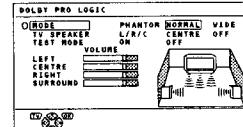
### Note:

- If DIGITAL SURROUND does not appear, disconnect the headphones from the TV.

### 5. Press ▼/▲ to select DOLBY PRO LOGIC, then press ▶.

The DOLBY PRO LOGIC menu appears.

### In the case of AV-32WP2EN or AV-32WP2EP:



### 6. Press ▼/▲ to select an item, and press ▲/▼ to change its setting.

### In the case of AV-32WP2EN or AV-32WP2EP:

| Item   |        |            |
|--------|--------|------------|
| Method | MODE   | TV SPEAKER |
| A      | NORMAL | L/R/C      |
| B      | NORMAL | CENTRE     |
| C      | NORMAL | OFF        |
|        |        | WIDE       |

### In the case of models other than AV-32WP2EN and AV-32WP2EP:

| Item   |         |            |
|--------|---------|------------|
| Method | MODE    | TV SPEAKER |
| A      | PHANTOM | L/R        |
| B      | NORMAL  | CENTRE     |
| C      | NORMAL  | OFF        |
|        |         | WIDE       |

### Notes:

- Set MODE to WIDE when using a full-range speaker as the centre speaker. Frequencies of 100 Hz or lower are output from the centre speaker to give Dolby Surround an even greater impact.

### 9. Press ▲/▼ to set TEST MODE to ON.

Test signals alternate among the speakers.

### Note:

- If the test signal level is small to listen to, adjust it with the volume of your audio amplifier. However, take care not to set the volume too high as this may damage your speakers.

### 7. Turn your audio amplifier on, and return the volume of your audio amplifier to the normal setting.

### 8. Press ▼/▲ to select TEST MODE.

10. Press ▲/▼ to adjust the level of each of the speakers so that their volumes are the same at the listening position (the place where the person is sitting in the diagram, see page 27).

**LEFT, RIGHT:**  
Front speaker L, R

**CENTRE:**  
Centre speaker

**SURROUND:**  
Surround speakers

**Notes:**

- When MODE is set to PHANTOM, the volume of CENTRE: (Centre speaker) cannot be adjusted.
- If the volume of both speakers is not the same even after adjusting the volume, adjust the volume of your audio amplifier.

### 11. Press OK.

The menu disappears.

- This completes the procedure.

## TROUBLESHOOTING

If the plug is disconnected from the AC socket, or the TV aerial has problems, you may think there is a problem with the TV itself. Be sure to check the following before calling for service.

### IMPORTANT

- Review all instructions in this manual.

| Problem   | Action   |
|-----------|--|
| ■ GENERAL | No power supply.<br>Insert the plug in an AC socket.<br>Press the Main power button (see page 6).  |
|           | No picture or sound.<br>Check aerial connections (see page 4).<br>Press the number 0 button to select the correct mode (see page 10).<br>Select the correct colour system manually (see page 11).                                |
|           | The power shuts off automatically.<br>Press the Standby button to turn the power on again (see page 6).  |
|           | Inoperable remote control.<br>Replace the batteries (see page 2).<br>Insert the batteries correctly (see page 2).<br>Use the remote control within about 7 metres of the TV.   |
|           | MENU can not be displayed.<br>Are you watching the Teletext screen?<br>None of the MENU operations are possible in the Text mode. Perform the MENU operation after pressing the TV/Text button to cancel the Text mode.          |
| ■ PICTURE | Poor colour.<br>Adjust COLOUR and BRIGHT (see page 12).<br>Select the correct colour system manually (see page 11).  |
|           | The screen mode suddenly changed.<br>The ZOOM mode's automatic selective function is working (see page 13).  |
|           | The picture is tilted (AV-32WP2EN/EP, AV-32WZ2EN/EP only).<br>Use the PICTURE TILT to correct the tilt (see page 26).  |
|           | The SUB-picture image is disordered.<br>If the MAIN-picture image signal condition is bad, the SUB-picture image may be disordered. If the MAIN-picture image signal condition is improved, the SUB-picture image also improves. |
|           | The top and bottom of the MAIN-picture or SUB-picture are missing.<br>If the picture standard of the MAIN-picture and SUB-picture are different, the top and bottom of one of them may be missing.                               |
|           | The SUB-picture display suddenly disappears.<br>If an external device is operated, the SUB-picture may disappear. If this happens, press the PIP button once more and redisplay the SUB-picture.                                 |

AV-32WZ2EN  
AV-32WZ2EP  
AV-28WZ2EN  
AV-28WZ2EP

## TROUBLESHOOTING

| Problem   | Action   |
|---|--|
| <b>PICTURE</b>  |  |
| The same image is displayed in both the MAIN-picture and SUB-picture.     | If the SWAP button is pressed when the image from the external decoder is displayed in the MAIN-picture, the same image is displayed in both the MAIN-picture and SUB picture. If the SWAP button is pressed once more, the previous state is returned to.   |
| Lines or streaks in picture (interference).                               | Move the components apart until the interference is eliminated.  |
| Spots (crosstalk).  | Reposition the aerial.   |
| Double pictures (ghosts).   | Reposition the aerial.   |
| Snowy pictures (noise).   | Replace with an aerial with better directionality.   |
| The screen turns blue.  | Replace with an aerial with better directionality.   |
| <b>SOUND</b>  |  |
| No sound from the TV's speakers.  | Disconnect the headphones.<br>If you want to have sound come from both the TV's speaker and headphones, set TV SPEAKER in the HEADPHONE menu to ON. (See page 8.)<br>Set SPEAKER to ON (see page 27).  |
| The headphone volume level can not be adjusted.                           | It can not be adjusted with the Volume +/- button. Adjust it with the VOLUME function in the HEADPHONE menu. (See page 8.)   |
| The sound from the TV does not stop even if the headphones are connected. | TV SPEAKER in the HEADPHONE menu is set to ON. Change the setting to OFF. (See page 8.)  |
| No stereo sound.  | Change STEREO/I+II to CO mode (see page 11).<br>Is TV SPEAKER in the PRO LOGIC 3D-PHONIC menu or DOLBY PRO LOGIC menu set to CENTRE? Change the TV SPEAKER setting to L/R/C or L/C. (See pages 27 and 28.)<br>When the SUB-picture is in TV mode, the SUB-picture sound is monaural only.  |
| No "SUB-I" or "SUB-II" sound in a multisound broadcast.                   | Change STEREO/I+II to the correct mode (see page 11).<br>The Multi sound function does not work for the SUB-picture sound.   |
| Surround function does not function properly.                             | Dolby Pro Logic Surround and DOLBY PRO LOGIC 3D-PHONIC work properly only with Dolby Surround encoded programmes.<br>Functions other than HYPER SOUND and the Headphone surround functions work properly only with stereo programmes.<br>HYPER SOUND works properly only with monaural programmes.<br>None of the surround sound functions work for the SUB picture sound. |
| The POWER BASS function does not work.                                    | Are you listening to the SUB picture sound? The POWER BASS function does not work for the SUB picture sound.   |
| <b>TELETEXT</b>   |  |
| No teletext reception.  | Tune to a teletext broadcast channel (see page 18).<br>We recommend that you not videotape teletext, as it may not be recorded correctly.  |
| The current time is not displayed.  | Tune to a teletext broadcast channel (see page 16).  |

**The following are normal and are NOT malfunctions:**

- When you touch the CRT surface, you might feel a slight charge of static electricity. This is because the CRT contains static electricity; it does not affect the human body.
- The TV may emit a crackling sound due to a sudden change in temperature. There is no problem unless the picture sound is abnormal.
- When a bright still image (of a white dress, for example) appears on the screen, the image may be coloured. This problem occurs in all CRTs, and as the bright image disappears, such colouration also disappears.
- This TV is equipped with a microcomputer that may operate abnormally due to interference from external components. If this happens, turn off the main power and disconnect the power cord from the AC socket. Then reconnect the power cord to AC socket and turn on the main power again.

AV-32WZ2EP  
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AV-28WZ2EP

## Channel table

- The following table shows the relationship between the displayed CH/CC channel number and the actual channel number.
- The actual channel numbers for the "CC" channel numbers from CC110 to CC161 differ depending on the cable TV station. Check which actual channel numbers correspond to which "CC" channels while referring to the broadcast frequencies which are indicated in the channel tables of each cable TV station. If you can not find the broadcast frequency for a channel, contact the cable TV station.

| CH             | Channel        | CH             | Channel | CC             | Channel | CC             | Channel    |
|----------------|----------------|----------------|---------|----------------|---------|----------------|------------|
| CH 02 / CH 202 | E2             | CH 40 / CH 240 | E40     | CC 01 / CC 201 | S1      | CC 31 / CC 231 | S31        |
| CH 03 / CH 203 | E3, ITALY A    | CH 41 / CH 241 | E41     | CC 02 / CC 202 | S2      | CC 32 / CC 232 | S32        |
| CH 04 / CH 204 | E4, ITALY B    | CH 42 / CH 242 | E42     | CC 03 / CC 203 | S3      | CC 33 / CC 233 | S33        |
| CH 05 / CH 205 | E5, ITALY D    | CH 43 / CH 243 | E43     | CC 04 / CC 204 | S4      | CC 34 / CC 234 | S34        |
| CH 06 / CH 206 | E6, ITALY E    | CH 44 / CH 244 | E44     | CC 05 / CC 205 | S5      | CC 35 / CC 235 | S35        |
| CH 07 / CH 207 | E7, ITALY F    | CH 45 / CH 245 | E45     | CC 06 / CC 206 | S6      | CC 36 / CC 236 | S36        |
| CH 08 / CH 208 | E8             | CH 46 / CH 246 | E46     | CC 07 / CC 207 | S7      | CC 37 / CC 237 | S37        |
| CH 09 / CH 209 | E9, ITALY G    | CH 47 / CH 247 | E47     | CC 08 / CC 208 | S8      | CC 38 / CC 238 | S38        |
| CH 10 / CH 210 | E10, ITALY H   | CH 48 / CH 248 | E48     | CC 09 / CC 209 | S9      | CC 39 / CC 239 | S39        |
| CH 11 / CH 211 | E11, ITALY H+1 | CH 49 / CH 249 | E49     | CC 10 / CC 210 | S10     | CC 40 / CC 240 | S40        |
| CH 12 / CH 212 | E12, ITALY H+2 | CH 50 / CH 250 | E50     | CC 11 / CC 211 | S11     | CC 41 / CC 241 | S41        |
| CH 21 / CH 221 | E21            | CH 51 / CH 251 | E51     | CC 12 / CC 212 | S12     | CC 75 / CC 275 | X          |
| CH 22 / CH 222 | E22            | CH 52 / CH 252 | E52     | CC 13 / CC 213 | S13     | CC 76 / CC 276 | Y          |
| CH 23 / CH 223 | E23            | CH 53 / CH 253 | E53     | CC 14 / CC 214 | S14     | CC 77 / CC 277 | Z, ITALY C |
| CH 24 / CH 224 | E24            | CH 54 / CH 254 | E54     | CC 15 / CC 215 | S15     | CC 78 / CC 278 | Z+1        |
| CH 25 / CH 225 | E25            | CH 55 / CH 255 | E55     | CC 16 / CC 216 | S16     | CC 79 / CC 279 | Z+2        |
| CH 26 / CH 226 | E26            | CH 56 / CH 256 | E56     | CC 17 / CC 217 | S17     |                |            |
| CH 27 / CH 227 | E27            | CH 57 / CH 257 | E57     | CC 18 / CC 218 | S18     |                |            |
| CH 28 / CH 228 | E28            | CH 58 / CH 258 | E58     | CC 19 / CC 219 | S19     |                |            |
| CH 29 / CH 229 | E29            | CH 59 / CH 259 | E59     | CC 20 / CC 220 | S20     |                |            |
| CH 30 / CH 230 | E30            | CH 60 / CH 260 | E60     | CC 21 / CC 221 | S21     |                |            |
| CH 31 / CH 231 | E31            | CH 61 / CH 261 | E61     | CC 22 / CC 222 | S22     |                |            |
| CH 32 / CH 232 | E32            | CH 62 / CH 262 | E62     | CC 23 / CC 223 | S23     |                |            |
| CH 33 / CH 233 | E33            | CH 63 / CH 263 | E63     | CC 24 / CC 224 | S24     |                |            |
| CH 34 / CH 234 | E34            | CH 64 / CH 264 | E64     | CC 25 / CC 225 | S25     |                |            |
| CH 35 / CH 235 | E35            | CH 65 / CH 265 | E65     | CC 26 / CC 226 | S26     |                |            |
| CH 36 / CH 236 | E36            | CH 66 / CH 266 | E66     | CC 27 / CC 227 | S27     |                |            |
| CH 37 / CH 237 | E37            | CH 67 / CH 267 | E67     | CC 28 / CC 228 | S28     |                |            |
| CH 38 / CH 238 | E38            | CH 68 / CH 268 | E68     | CC 29 / CC 229 | S29     |                |            |
| CH 39 / CH 239 | E39            | CH 69 / CH 269 | E69     | CC 30 / CC 230 | S30     |                |            |

(Continued to the next page)